S/N 10/566,483 <u>PATENT</u>

<u>IN THE UNITED STATES PATENT AND TRADEMARK OFFICE</u>

Applicant: SAITO et al.   Examiner: Karuna P. Reddy

Serial No.: 10/566,483   Group Art Unit: 1713

Filed: January 30, 2006   Attorney Docket No.: 10873.1845USWO

Title: ABSORBENT RESIN PARTICLE, AND ABSORBER AND

       ABSORBENT ARTICLE EMPLOYING THE SAME

<u>DECLARATION UNDER 37 C.F.R. 1.132</u>

HON. COMMISSIONER OF PATENTS AND TRADEMARKS

WASHINGTON, D.C. 20231

Dear Sir:

     I, Daisuke TAGAWA, a citizen of Japan, residing at 36-1-1109

Hirakawa Chayaura, Jyoyo-shi, Kyoto-fu, Japan, hereby declare as follows:

     I am one of the inventors of the invention entitled "ABSORBENT

RESIN PARTICLE, AND ABSORBER AND ABSORBENT ARTICLE

EMPLOYING THE SAME" as claimed in the United States Patent Application

Serial No. 10/566,483 filed on January 30, 2006.

     I received a Master's degree from Department of Material Science,

Kyushu Institute of Technology in March 1996. Since April 1996, I have been

working for Sanyo Chemical Industries, Ltd., in Kyoto, Japan, as a researcher

in the field of organic polymers, particularly, absorbent resins. Since October

1996, I have been engaged in researches at the section to which the inventors

also belonged, and have been familiar with the technical field of the present

invention, and I am an inventor of the present invention.

     To verify that the water absorbent resin particles of Examples of the

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cited reference 2 (Takemoto et al., US 5,075,373) and the cited reference 3 (Suskind et al., US 5,849,816) do not satisfy the subject matter of claims 1 to 7 of the present US Patent Application Serial No. 10/566,483, I have conducted the following experiments.

Comparative samples 1' to 31' were obtained by the following method: water retention materials with water-absorbency obtained in the same manners as those of Examples 1 to 31 of the cited reference 2 were pulverized by a commercially available juicer-mixer, and classified by using sieves with 600 μm and 250 μm mesh openings so that the particle size was adjusted to 250 μm to 600 μm.   Each of the samples was subjected to the measurement of a diffusion absorption amount, an absorption time (Z), a water-retention amount (X), a liquid permeation rate (Y) in the same manners as those for Examples of the present invention.   The results of the measurement are shown in Table 1 below.

Comparative samples 1 to 11, 17, and 20 to 31 were obtained in the same manner as those of Examples 1 to 11, 17, and 20 to 31 of the cited reference 3.   Each of the samples was subjected to the measurement of a diffusion absorption amount, an absorption time (Z), a water-retention amount (X), a liquid permeation rate (Y) in the same manners as those for Examples of the present invention.   The results of the measurement are shown in Table 2 below.

Further, absorbers and disposable diapers were produced in the same manner as that of Example 21 of the present invention except that the comparative samples 1' to 31' and 1 to 11, 17, and 20 to 31 obtained as described above were used in place of the absorbent resin particles.   The performances of the obtained diapers were evaluated in the same manner as that for Examples of the present application.   The results of the evaluation are shown in Tables 3 and 4 below.

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As clear from Tables 1 and 2, all the comparative samples did not satisfy the requirements described in claims 7 to 10 of the present application. Besides, as clear from Tables 3 and 4, all the diapers obtained by using the comparative samples were inferior to those of the present invention regarding the absorption amount until leakage, the surface dry feeling, and the SDME surface dryness value.

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Table 1

	Sample	Diffusion absorption amount (ml)	Water retention amount (X) (g/g)	Liquid permeation rate under loading (Y) (ml/min)	Absorption time (Z) (min)	Satisfying Formula (2)?	-0.0071(Y)+2.7	Satisfying Formula (3)?	Satisfying Formula (4)?
	1'	10	11	210	15.4	No	1.2	No	No
	2'	8	14	240	14.6	No	1.0	No	No
	3'	9	16	220	15.1	No	1.1	No	No
	4'	12	9	240	14.3	No	1.0	No	No
	5'	11	3	260	15.9	No	0.9	No	No
	6'	14	14	230	14.9	No	1.1	No	No
	7'	16	16	220	15.1	No	1.1	No	No
	8'	12	12	240	15.9	No	1.0	No	No
	9'	10	12	250	15.4	No	0.9	No	No
	10'	9	16	260	12.6	No	0.9	No	No
	11'	15	11	240	13.9	No	1.0	No	No
	12'	12	10	230	14.1	No	1.1	No	No
	13'	9	9	210	13.9	No	1.2	No	No
Cited reference 2	14'	10	13	200	14.1	No	1.3	No	No
	15'	14	11	240	14.6	No	1.0	No	No
	16'	9	12	230	15.9	No	1.1	No	No
	17'	12	12	220	14.7	No	1.1	No	No
	18'	11	10	210	14.8	No	1.2	No	No
	19'	15	8	240	12.6	No	1.0	No	No
	20'	13	9	200	18.5	No	1.3	No	No
	21'	15	9	220	13.6	No	1.1	No	No
	22'	13	9	210	17.6	No	1.2	No	No
	23'	18	9	280	15.4	No	1.1	No	No
	24'	9	8	210	12.6	No	1.2	No	No
	25'	7	9	230	14.9	No	1.1	No	No
	26'	15	10	240	13.4	No	1.0	No	No
	27'	16	9	190	16.2	No	1.4	No	No
	28'	12	10	180	15.4	No	1.4	No	No
	29'	14	8	190	13.6	No	1.4	No	No
	30'	11	11	200	14.5	No	1.3	No	No
	31'	18	10	210	13.9	No	1.2	No	No

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Table 2

	Sample	Diffusion absorption amount (ml)	Water-retention amount (X) (g/g)	Liquid permeation rate under loading (Y) (ml/min)	Absorption time (Z) (min)	Satisfying Formula (2) ?	-0.0071(Y)+2.7	Satisfying Formula (3) ?	Satisfying Formula (4) ?
Cited reference 3	1	21	18	120	7.3	No	1.8	No	No
	2	25	36	30	8.1	Yes	2.5	No	Yes
	3	31	15	131	8.6	No	1.8	No	No
	4	20	26	97	5.4	No	2.0	No	Yes
	5	30	46	2	6.2	Yes	2.7	No	No
	6	29	45	3	7.3	Yes	2.7	No	No
	7	24	45	2	5.4	Yes	2.7	No	No
	8	26	17	134	6.2	No	1.7	No	No
	9	27	25	89	6.4	No	2.1	No	Yes
	10	23	81	40	5.2	Yes	2.4	No	Yes
	11	25	18	134	6.7	No	1.7	No	No
	17	23	14	114	6.4	No	1.9	No	No
	20	21	15	121	8.1	No	1.8	No	No
	21	26	22	86	6.7	No	2.1	No	Yes
	22	23	21	74	6.1	No	2.2	No	Yes
	23	22	18	71	5.9	No	2.2	No	Yes
	24	21	20	96	7.1	No	2.0	No	Yes
	25	28	20	84	7.6	No	2.1	No	Yes
	26	25	19	111	6.2	No	1.9	No	No
	27	26	10	94	5.1	No	2.0	No	Yes
	28	80	8	90	5.4	No	2.1	No	Yes
	29	31	14	124	6.9	No	1.8	No	No
	30	28	17	135	6.4	No	1.7	No	No
	31	31	21	118	5.4	No	1.9	No	No

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Table 3

	Sample	Absorption amount until leakage (g)	Surface dry feeling	SDME Surface dryness value (%)
Cited reference 2	1'	190	×	11
	2'	180	×	14
	3'	170	×	16
	4'	180	×	9
	5'	170	×	3
	6'	180	×	14
	7'	160	×	16
	8'	170	×	12
	9'	160	×	12
	10'	180	×	16
	11'	160	×	11
	12'	170	×	10
	18'	160	×	9
	14'	180	×	18
	15'	190	×	11
	16'	180	×	12
	17'	170	×	12
	18'	190	×	10
	19'	170	×	8
	20'	190	×	9
	21'	180	×	9
	22'	170	×	9
	28'	160	×	9
	24'	190	×	8
	25'	170	×	9
	26'	160	×	10
	27'	190	×	9
	28'	180	×	10
	29'	170	· ×	8
	30'	180	×	11
	31'	170	×	10

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Table 4

	Sample	Absorption amount until leakage (g)	Surface dry feeling	SDME Surface dryness value (%)
Cited reference 3	1	290	△	30
	2	280	△	32
	3	260	△	26
	4	270	△	30
	5	310	△	25
	6	270	△	24
	7	260	△	21
	8	250	△	30
	9	280	△	34
	10	270	△	29
	11	330	△	26
	17	310	△	27
	20	310	△	28
	21	330	△	30
	22	320	△	27
	23	260	△	26
	24	310	△	24
	25	280	△	26
	26	260	△	31
	27	250	△	30
	28	270	△	30
	29	260	△	31
	30	330	△	33
	31	300	△	34

I declare under the penalty of perjury of the laws of the United States of America that the foregoing is true and correct to the best of my information and belief.

Signed this December *14*, 2007, at Kyoto, JAPAN

Daisuke Tagawa

Daisuke TAGAWA

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